Quarknet Annual Report - September 2012

Florida International University Center – Miami, Fl

Quarknet Center: F.I.U. - Center since 2004
Faculty and Staff involvement:
Dr. Jorge Rodriguez - Mentor Scientist – PI (Recent Change)
David Jones - Coordinator
Lead Teachers affiliated with FIU Center
• David Jones – 2004
• JC Catala, Miami Lakes Educational Center, Miami Fl – 2008 (moved on to college teaching in 2010)
• Russell Harcha –Miami Killian Senior HS, Miami Fl – 2009
• Jorge Barroso - Miami Coral Reef Sr. HS, Miami Fl -- 2011
• Andres Guaty - Miami Felix Varela Sr. HS, Miami Fl -- 2011
• Arsenio Meneses – Coral Glades HS, Coral Springs, Fl - 2012
Workshop - Summer 2012 July – 5 day workshop July 30 – Aug. 3, 2012
Participants:
• Anres Meneses - Coral Glades HS
• Jorge Barroso – Miami Coral Reef Sr. HS
• Russell Harcha – Miami Killian Sr. HS

Stipends:

3 @ $100 per day
Total = $1500

Arsenio, Russ, and Jorge (left to right) working with detector (July 2012)

Academic Year 2011-12 FIU Center Activity

Classroom Detectors:

• Killian Detector:

Another detector was placed at Miami Killian HS with our other Lead Teacher Russell Harcha. Russell enjoys particle physics and the chance to work with the detector. Russell seemed to make a little headway with using the detector and a small little "physics club" that worked with him after school. He had a group of students make a little progress in the 11-12 year to get it up to speed and plateau the detector. These students are coming back for the 12-13 year and are poised to attempt to do some experiments this year with the detector.

Felix Varela - Andres Guaty at Felix Varela Sr. HS took hold of a detector in early academic year 2010-11. The first year had some bumps in figuring things out. Andres missed the Summer 12 Workshop.

Jorge Barroso (Coral Reef HS) - Jorge found the project difficult in his first year with a detector. He is determined to make a better use of the program during the 12-13 year. He seemed to be a better understanding level (physics/use of detector) after this summer's workshop.

2012-13 - Detectors in Schools

The current year will have detectors at

i) Miami Killian - Russell Harcha
ii) Miami Coral Reef - Jorge Barroso
iii) Felix Varela Sr. HS - Andres Guaty
iv) Arsenio Meneses – Coral Glades HS

All four teachers are now Quarknet trained (Boot Camp) and participated in our Summer Workshop. Arsenio actually did the CERN trip for HS teachers in 2011. The three teachers had a good working rapport with each other and might offer a good chance for more collaboration amongst the three of them. Their Summer Workshop provided a good springboard for collaboration and ideas. Jorge Rodriguez spent time with all three and they all created a good working relationship between them the four of them.

Summer 2012 Workshop –

The workshop was a 5 day workshop. Jorge Rodriguez interacted with the three QN teachers. They worked on the following activities during the week:

i) Build a new detector (are fourth detector) from scratch
ii) Learn the Z-term/working with electronics
iii) Plateauing the working detector
iv) Working out kinks/bugs with Z-term, uploading, and interacting with the Cosmic Ray E-lab interface
v) Working with Jorge Rodriguez on Particle physics ideas.

The three teachers had a great week and really enjoyed the interaction with PI/Particle Physicist Jorge Rodriguez. I think the connections made during the week will help out with troubleshooting during the year.

2012 and beyond – I think these three lead teachers (Russ,Jorge, and Anres) are a great working crew, the addition of Arsenio seems to be a good one. He

is fairly determined to figure all of this out and to get something going in his classroom.

Another teacher in Naples (FL) (Wendy Athens) had interacted with me (David Jones) about the QN project. However, she has stated fairly candidly that she is not interested in a detector, but that she just wants her students to do "particle physics"/science fair experiments from the web based QuarkNet activities. I tried to convince her to go step by step and eventually work up to the detector, but she had no interest in this option.

Jorge Rodriguez is also seeing the possibilities of how this all works in a high school environment and I am sure that he will have some ideas to support the program down the road.

Presentations (11-12)

Jorge Rodriguez gave a public lecture/talk about the "faster than light" issue in October (October 29, 2011) at the Miami Dade Community College physics department. The talk was open to our larger community of high school physics teachers and students. It was fairly well attended (about 30) and we had a group of students from two high schools make their way to the talk. It was a good time by all measures and a very lively talk by Dr. Rodriguez.